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Aug 5, 2003

DERWENT-ACC-NO: 2000-498892

DERWENT-WEEK: 200353

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TITLE: Electrochemical cell comprises, membrane disposed between electrodes in high, low pressure flow fields and electrically conductive pressure pad located adjacent to and in contact with high pressure flow field

INVENTOR: DRISTY, M E; MOLTER, T M ; MOULTHROP, L C ; SHIEPE, J K

PATENT-ASSIGNEE:

ASSIGNEE

PROTON ENERGY SYSTEMS INC

DRISTY M E

MOLTER T M

MOULTHROP L C

SHIEPE J K

CODE

PROTN

DRISI

MOLTI

MOULI

SHIEI

PRIORITY-DATA: 1999US-0413782 (October 7, 1999), 1998US-114559P (December 31, 1998), 2001US-0835502 (April 16, 2001)

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PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<input type="checkbox"/> JP 2003523599 W	August 5, 2003		031	H01M008/02
<input checked="" type="checkbox"/> WO 200039362 A2	July 6, 2000	E	017	C25B009/00
<input type="checkbox"/> AU 200035802 A	July 31, 2000		000	C25B009/00
<input type="checkbox"/> US 20010013469 A1	August 16, 2001		000	C25B009/00
<input type="checkbox"/> EP 1144730 A2	October 17, 2001	E	000	C25B009/00
<input type="checkbox"/> US 6365032 B1	April 2, 2002		000	C25B001/00
<input type="checkbox"/> EP 1144730 B1	September 4, 2002	E	000	C25B009/00
<input type="checkbox"/> DE 69902822 E	October 10, 2002		000	C25B009/00
<input type="checkbox"/> US 6585869 B2	July 1, 2003		000	C25B009/00

DESIGNATED-STATES: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU S SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE I KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT L LV MC MK NL PT RO SE SI AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

APPLICATION-DATA:

PUB-NO

APPL-DATE

APPL-NO

DESCRIPTOR

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JP2003523599W	November 11, 1999	1999WO-US26509	
JP2003523599W	November 11, 1999	2000JP-0591248	
JP2003523599W		WO <u>200039362</u>	Based on
WO 200039362A2	November 11, 1999	1999WO-US26509	
AU 200035802A	November 11, 1999	2000AU-0035802	
AU 200035802A		WO <u>200039362</u>	Based on
US20010013469A1	December 31, 1998	1998US-114559P	Provisional
US20010013469A1	October 7, 1999	1999US-0413782	Cont of
US20010013469A1	April 16, 2001	2001US-0835502	
EP 1144730A2	November 11, 1999	1999EP-0971217	
EP 1144730A2	November 11, 1999	1999WO-US26509	
EP 1144730A2		WO <u>200039362</u>	Based on
US 6365032B1	December 31, 1998	1998US-114559P	Provisional
US 6365032B1	October 7, 1999	1999US-0413782	
EP 1144730B1	November 11, 1999	1999EP-0971217	
EP 1144730B1	November 11, 1999	1999WO-US26509	
EP 1144730B1		WO <u>200039362</u>	Based on
DE 69902822E	November 11, 1999	1999DE-0602822	
DE 69902822E	November 11, 1999	1999EP-0971217	
DE 69902822E	November 11, 1999	1999WO-US26509	
DE 69902822E		EP 1144730	Based on
DE 69902822E		WO <u>200039362</u>	Based on
US 6585869B2	December 31, 1998	1998US-114559P	Provisional
US 6585869B2	October 7, 1999	1999US-0413782	Cont of
US 6585869B2	April 16, 2001	2001US-0835502	
US 6585869B2		US 6365032	Cont of

INT-CL (IPC): C25 B 1/00; C25 B 9/00; C25 B 11/02; C25 B 11/04; C25 B 13/02; C25 B 13/04; C25 B 15/08; H01 M 8/02; H01 M 8/10; H01 M 8/24

ABSTRACTED-PUB-NO: EP 1144730B  
BASIC-ABSTRACT:

NOVELTY - An electrochemical cell comprises, high pressure side electrode, low pressure side electrode, membrane (108) interposed between and in intimate contact with high and low pressure side electrode, low pressure flow field (110), high pressure flow field (112) and electrically conductive pressure pad (118) located adjacent to and in close contact with high pressure flow field.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of operating a high pressure electrochemical cell. A low pressure fluid (LPF) is introduced into a low pressure flow field, and is reacted on a low pressure electrode (LPE) to form ions. The LPE is adjacent to and in fluid communicating with LPF. The ions formed are migrated to high pressure electrode (HPE) across a membrane and a high pressure fluid (HPF) is formed at HPE. The HPF formed has pressure exceeding 1000 psi greater than the pressure of LPF and is passed through a high pressure flow field which is disposed in intimate contact with an electrically conductive pressure pad.

USE - For use as electrolytic cell and fuel cells.

ADVANTAGE - The electrochemical cell is inexpensive, highly reliable and can be manufactured, assembled by simple methods. The electrochemical cell has lower electrical resistance which leads to high current density and lower cell voltage due to elimination of screen layers.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic diagram of electrochemical cell.

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Membrane 108

Low pressure flow field 110

High pressure flow field 112

Pressure pad 118  
ABSTRACTED-PUB-NO:

US 6365032B  
EQUIVALENT-ABSTRACTS:

NOVELTY - An electrochemical cell comprises, high pressure side electrode, low pressure side electrode, membrane (108) interposed between and in intimate contact with high and low pressure side electrode, low pressure flow field (110), high pressure flow field (112) and electrically conductive pressure pad (118) located adjacent to and in close contact with high pressure flow field.

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Membrane 108

Low pressure flow field 110

High pressure flow field 112

Pressure pad 118

NOVELTY - An electrochemical cell comprises, high pressure side electrode, low pressure side electrode, membrane (108) interposed between and in intimate contact with high and low pressure side electrode, low pressure flow field (110), high pressure flow field (112) and electrically conductive pressure pad (118) located adjacent to and in close contact with high pressure flow field.

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DESCRIPTION OF DRAWING(S) - The figure shows the schematic diagram of electrochemical cell.

Membrane 108

Low pressure flow field 110

High pressure flow field 112

Pressure pad 118

US20010013469A

NOVELTY - An electrochemical cell comprises, high pressure side electrode, low pressure side electrode, membrane (108) interposed between and in intimate contact with high and low pressure side electrode, low pressure flow field (110), high pressure flow field (112) and electrically conductive pressure pad (118) located adjacent to and in close contact with high pressure flow field.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of operating a high pressure electrochemical cell. A low pressure fluid (LPF) is introduced into a low pressure flow field, and is reacted on a low pressure electrode (LPE) to form ions. The LPE is adjacent to and in fluid communicating with LPF. The ions formed are migrated to high pressure electrode (HPE) across a membrane and a high pressure fluid (HPF) is formed at HPE. The HPF formed has pressure exceeding 1000 psi greater than the pressure of LPF and is passed through a high pressure flow field which is disposed in intimate contact with an electrically conductive pressure pad.

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DESCRIPTION OF DRAWING(S) - The figure shows the schematic diagram of electrochemical cell.

Membrane 108

Low pressure flow field 110

High pressure flow field 112

Pressure pad 118

WO 200039362A

CHOSEN-DRAWING: Dwg.3/3

TITLE-TERMS: ELECTROCHEMICAL CELL COMPRISE MEMBRANE DISPOSABLE ELECTRODE HIGH LOW PRESSURE FLOW FIELD ELECTRIC CONDUCTING PRESSURE PAD LOCATE ADJACENT CONTACT HIGH PRESSURE FLOW FIELD

DERWENT-CLASS: A14 A26 A85 E36 J03 L03 X16 X25

CPI-CODES: A12-E06; A12-E09; E11-N; E31-A02; J03-A; L03-E04;

EPI-CODES: X16-C; X16-F02; X25-R01C;

CHEMICAL-CODES:

Chemical Indexing M3 \*01\*

Fragmentation Code

C101 C550 C810 M411 M720 M904 M905 N120 N363 Q454

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Specific Compounds  
01532K 01532P  
Registry Numbers  
1532P 1532U

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1532P; 1532U

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; F81 F\* 7A ; P1445\*R F81 Si 4A Polymer Index [1.2] 018 ; H0124\*R ;  
P0500 F\* 7A Polymer Index [1.3] 018 ; ND01 ; K9416 ; Q9999 Q7396 Q7330 ; B9999 B5221 B4740 ;  
Q9999 Q7818\*R ; K9676\*R ; K9518 K9483 ; K9552 K9483 ; K9610 K9483 ; Q9999 Q7410 Q7330

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2000-149602

Non-CPI Secondary Accession Numbers: N2000-369843